

A HALTERMELÉS HELYZETE ÉS PERSPEKTÍVÁI MAGYARORSZÁGON

FISH PRODUCTION AND ITS PERSPECTIVES IN HUNGARY

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Összefoglalás

Az utóbbi évek kampányai ellenére a hazai halfogyasztók továbbra is nagyrészt pontyot fogyasztanak, ezzel keresletet teremtve a pontytermelésre. Az ország a pontytermelés szempontjából kedvező természeti adottságokkal rendelkezik, s ebből adódóan a hazai piac kielégítése mellett külföldi piacokra is termel. Hosszútávon termelékeny és víztakarékos, környezet- és természetbarát akvakultúra rendszereket célszerű kialakítani hazánkban, illetve érdemes a termelőknek ilyen módon átalakítaniuk már meglévő tavaikat. Kívánatos a szolgáltatások bővítése, multifunkcionális halgazdaságok működtetése (pl. haltermelés, horgásztó, halbolt, étterem, rekreációs tevékenység egy helyen működjön).

Abstract

Despite the campaigns of recent years Hungarian consumers are continuing to mainly consume carp thereby creating demand for carp production. Hungary has very favourable natural conditions for carp production, therefore it not only satisfies domestic markets but also produces to foreign markets. Based on the experiences, in the long term, productive and water-saving, nature and environment friendly aquaculture systems should be developed, and farmers should transform their existing fish ponds according to these aspects. It is desirable to expand services and to operate multifunctional fish farms (e.g. fish production, fishing pond, fish shop, restaurant, recreational activities operated at the same place).

1. Introduction

According to the latest issue of FAO (2014), the global production of fisheries and aquaculture was 158 million tonnes in 2012, about 10 million tonnes more than in 2010. The share of fisheries production amounted to about 70 percent of the total food consumption in the 1980's, while it reached a record high when it has exceeded 85 percent (136 million tonnes) in 2012. At the same time, fish consumption per capita has significantly increased in the last decades, it almost doubled between 1960 and 2012 from 10 kg to 19 kg. Today 17 percent of the world's protein intake comes from fish [1]. The average fish consumption is around 20 to 22 kg/capita/year in the European Union, while

the Hungarian consumption is only 5 kg/capita/year including imported sea fish. The Government's plan for the period 2020-2030 is to increase fish consumption to 6 kg/capita/year at least in Hungary.

Based on the past decades, it can be stated that aquaculture is the fastest-growing sector of global food production based on animal husbandry. However, European aquaculture has not developed to such an extent as it is experienced in other parts of the world, like in Asia. The marine and freshwater stocks are over-fished or are on the border of biologically sustainable fishing level, therefore the fishing yields cannot be increased anymore, so the fish demand of the global population could only be satisfied by aquaculture production. By now it is clear that aquaculture means much more than simple fish production.

Hungary plays an important role in the European freshwater fish production. This is due to the country's favourable hydrological characteristics and production traditions. It is important to mention that fish production was the only sector in the agricultural economy which did not become loss-making after the regime change (1989) and the following transition period and could keep its traditional and cultural values compared to other animal husbandry sectors. However, the fishery sector only provides 0.015 percent of the total gross added value of national economy, 0.34 percent of agriculture and 2.4 percent of animal husbandry. The income situation of employees in the sector can be described well by the fact that their average net salary has not reached 75 percent of the national average over the past 10 years.

2. Methodology

Data were used from several sources. Sectoral statistical data (fish harvesting, revenues and expenses of fishery actors, development of agricultural investments and financial indicators), that were necessary to start the Hungarian Fisheries Operational Programme (MAHOP) in the 2014-2020 programming period, were collected by the Research Institute of Agricultural Economics (AKI) according to Act XLVI of 1993 on statistics. Data provision was carried out within the framework of the National Statistical Data Collection (OSAP) based on the authorisation of the act on statistics. The data of natural and legal persons with fish ponds or intensive fish farms were gathered within the framework of the Report Service of the Ministry of Agriculture. One of our most important sources was the Agricultural Statistics Information System (ASIR) which carries out statistical data collection. The AKI's data were used to analyse aquaculture, producer/at-the-pond and consumer prices [3], only the data on natural waters and international information had to be collected from external sources. For the former the data of the National Agricultural Research and Innovation Centre, Research Institute for Fisheries and Aquaculture (NAIK-HAKI) and for the latter the FAO database was available.

We carried out primary market research using quantitative and qualitative methodologies, standardised questionnaires and in-depth interviews. The population consisted of all business organisations and private farms which have fish ponds and water rights permit as population. The sampling can be considered methodologically representative either by taking into account the size of fish ponds or the quantity of fish production. Also, nearly 80 percent of the Hungarian fish production sector was covered throughout the selection process of the companies participating in the survey.

3. Results

According to the data received and processed within the framework of harvesting data collection, the total size of fish ponds was 29,349 hectares in the fish pond sector in 2014 of which 24,033 hectares were used for actual fish production. Last year 50 hectares of new fish ponds were created and 697 hectares were reconstructed (*Table 1*).

The gross fish production of fish ponds and intensive fish farms was 21,807 thousand tonnes in 2014 (*Table 1*). Eighty percent of aquaculture fish production was provided mainly in three regions of Hungary: the Northern Great Plain, the Southern Transdanubia and the Southern Great Plain.

Carp (*Cyprinus carpio*) is the dominant species in fish production for consumption (market) which is due to the consumer traditions in Hungary. Between 2005 and 2014 the fish production

intended for consumption has shown a decreasing tendency [2]. In 2014 nearly the same quantity was produced – 15,364 tonnes – as in the previous year (Table).

Table 1 Production figures of the Hungarian fisheries sector between 2010 and 2014

| Name | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---------|---------|---------|---------|---------|
| Fish farms and intensive factories | | | | | |
| Pond-operated area (hectares) | 23 639 | 24 364 | 26 083 | 24 608 | 24 033 |
| Fish production for consumption (tonnes) | 14 244 | 16 348 | 15 512 | 14 917 | 15 364 |
| Natural waters and reservoirs | | | | | |
| Utilised area (hectares) | 140 402 | 140 998 | 141 237 | 141 545 | 146 148 |
| Total catch (tonnes) | 6 216 | 7 047 | 6 717 | 6 466 | 7 464 |
| Of which fish for consumption (tonnes) | 6 006 | 6 790 | 6 294 | 6 153 | 7 165 |
| Total fish for consumption (tonnes) | 20 250 | 23 138 | 21 806 | 21 070 | 22 529 |

The Hungarian aquaculture production fully covers the demand of domestic fish consumption. The main species of fish pond production is carp, which amounts to 67 percent of the fish market [2]. The grass carp (*Ctenopharyngodon idella*), which rarefies aquatic plants, provided 4 percent and the plankton feeder bighead carp (mainly silver carp *Hypophthalmichthys molitrix*) 9 percent of the total harvesting in 2014. The total quantity of predator fish production harvested from fish ponds was 15 percent less in 2014 than in the previous year, which was mainly due to the significant decrease realised in the quantity of harvested catfish (*Silurus glanis*). The yield of harvested pike (*Esox lucius*) increased by 9 percent, zander (*Sander lucioperca*) by 19 percent, while catfish decreased by 25 percent (Figure 1).

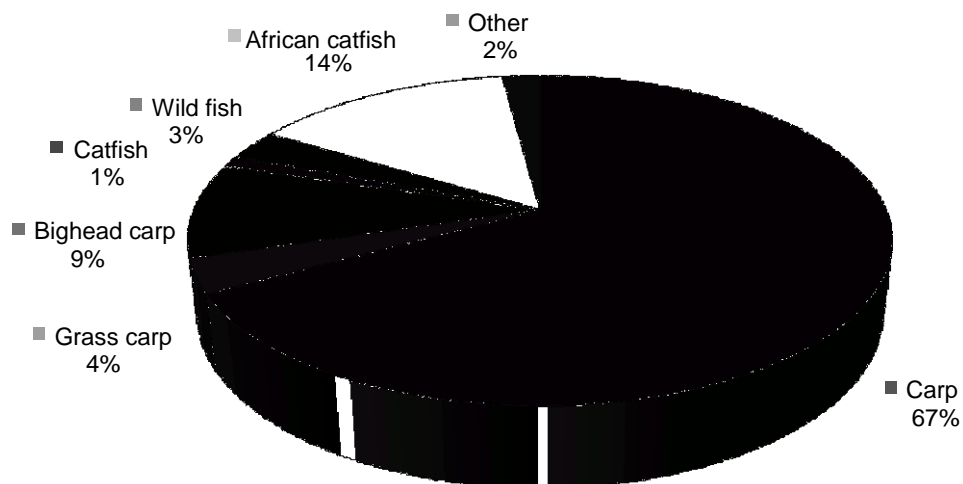


Figure 1 Distribution of fish species produced for consumption in the total catch of 2014

The quantity and value of Hungarian fish import and export have increased in 2014 following the tendencies of previous years. The target countries of fish export are Austria, Germany (predator

fish), Romania (carp), Poland (bighead carp). Carp export and import of Hungary have not changed significantly in recent years, except a slight decrease in 2012 (Table 2).

Table 2 Foreign carp trade of Hungary between 2010 and 2014

Source: Central Statistics Office (KSH)

| Year | Carp export | | Carp import | |
|------|-------------|--------------|-------------|--------------|
| | tonnes | thousand EUR | tonnes | thousand EUR |
| 2010 | 782,2 | 1 614,2 | 58,6 | 97,5 |
| 2011 | 1 249,5 | 2 558,5 | 227,9 | 373,3 |
| 2012 | 890,0 | 1 767,7 | 194,5 | 329,9 |
| 2013 | 1 393,1 | 2 538,0 | 239,2 | 363,1 |
| 2014 | 1 196,2 | 2 151,9 | 247,2 | 441,4 |

Hungary is among the largest African catfish (*Clarias gariepinus*) producers in Europe (Table), as in the previous years, the production of this species amounted to 89 percent of intensive fish production in 2014.

Table 3 African catfish yield of the main European producers between 2012 and 2013 Source: FAO

| Country | Produced volume tonnes | | Value thousand USD | |
|-----------------|---------------------------|-------|-----------------------|-------|
| | 2012 | 2013 | 2012 | 2013 |
| Bulgaria | 0 | 30 | 0 | 203 |
| Germany | 430 | 695 | 675 | 1 091 |
| Hungary | 1 852 | 2 050 | 5 352 | 5 042 |
| Austria | 263 | 290 | 1 116 | 1 155 |
| The Netherlands | 1 200 | 1 200 | 1 543 | 1 594 |

Almost 68 percent of the fish ponds are located in the disadvantaged sub-regions of Hungary where 70 percent of the operating pond area is 'round bank' pond of which 30 percent belongs to Natura 2000 areas. Most of the Natura 2000 fish pond areas are situated in the Szegedi, Sarkadi, Csongrádi and Ráckevei sub-regions [4].

Most of the fish ponds (72 percent) are located in the region of Transdanubia. The two main pond types are 'dam reservoirs' (41 percent) and 'round bank' ponds (27 percent). The formers are mainly located in Transdanubia (96 percent) and amounts to a total of 6.2 thousand hectares with 34 hectares average size. 32 percent of the total harvested fish originated from 'dam reservoirs'. Fish ponds with 'round bank' are typically located in the Great Plains (51 percent), with a total of 18 thousand hectares (148 hectares on average). The amount of fish harvested here makes up 61 percent of the total harvest ([5].

The indicators of employment followed the tendencies of the previous years. Fish producer data providers have offered regular jobs to 1,403 persons, mainly to male labour (82.8 percent). The majority of regular workers (86.6 percent) have full-time employment [3]. Nearly 70 percent of regular labourers in fish farming have been employed in the disadvantaged sub-regions of Hungary (Figure 3).

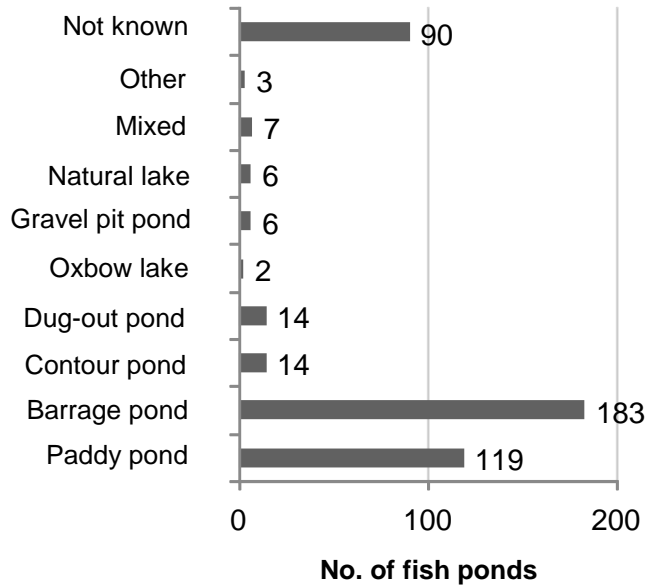


Figure 2 Number of fish ponds per type

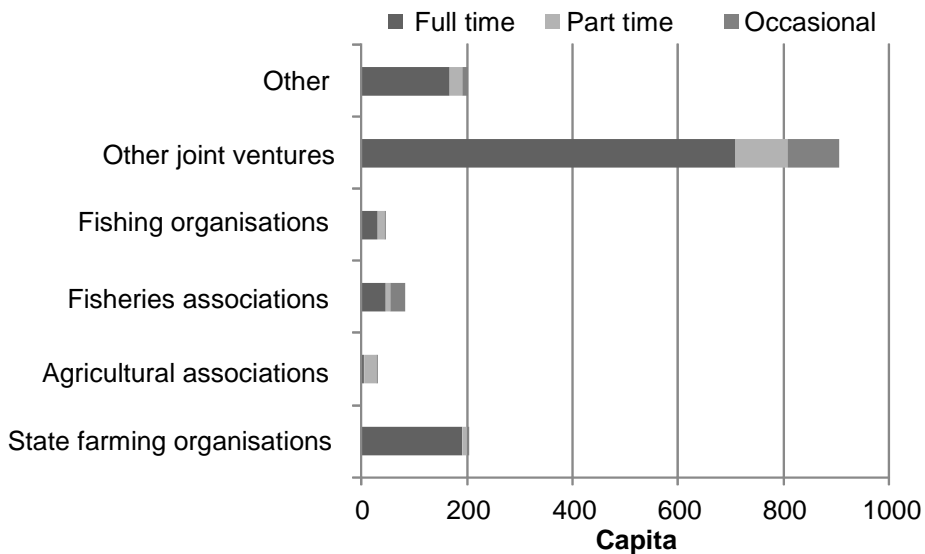


Figure 3 Employment according to farming types

4. Prospects

Aquaculture is the world’s fastest-growing sector of animal husbandry based food production. As a result of marine overfishing, the demand for healthy food (fish) consumption can only be satisfied by aquaculture production. The sector will have an increasing importance in the global diet too.

Aquaculture is undergoing a significant development process prompted by the National Fisheries Operational Programme within the European Fisheries Fund from 2014 to 2020 [6]. It can be a break point to have greater emphasis on geothermal energy based fish production in the sector, which would provide a good opportunity mainly for catfish production. Expansion of services, operation of multifunctional fish farms (e.g. fish production, fishing pond, fish shop, restaurant, recreational activities operated at one place) have a lot of potential. Hungarian fish farmers are increasingly recognising its importance and encouraging the presence of recreation and tourism

beside fish production which provide extra incomes, as well as diversification which secures livelihood for farmers and increases employment.

Silver carp production may experience its renaissance and can play an important role in public nutrition, dishes made of silver carp could be introduced in schools, kindergartens, commercial kitchens and canteens, etc.

Productive and water-saving environmentally-friendly aquaculture systems should be created as well as farmers should convert their existing ponds. The state is increasingly supporting professional practice, education, research and development at fish ponds. Students, researchers could go to the spot to carry out field studies.

5. Conclusions

Despite the successful fish history of Hungary the sector is not yet fully prepared to meet international challenges. The sector has difficulties to align with changes in consumer habits, distribution channels, and competition on water resources. It remains difficult to make domestically produced fish competitive abroad or even in Hungary against sea fish. Domestic producers have very weak bargaining position at multinational retail chains.

EU funds awarded for the planning period has to be spent successfully and targeted in the sector to create more factories focused just on fish processing with large capacities. The majority of domestic fish production could be processed in Hungary in a consumer-friendly way (without bones, with a wide selection of semi-finished and finished products), to force low quality, imported fish products off the market.

In respect of labour supply and payments the sector is not competitive with the meat or poultry industry. The vocational training is sorely missing in the sector.

The EU's development funds have induced a significant growth in the Hungarian fish industry, however the high proportion of own contribution for applications slows down the progress.

The lack of cooperation and collaboration between market actors is characteristic in the sector.

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